Universitat Autònoma de Barcelona

2020/2021

Bachelor's Degree Final Project

Code: 103284
ECTS Credits: 12

Degree	Type	Year	Semester
2501922 Nanoscience and Nanotechnology	OB	4	0

The proposed teaching and assessment methodology that appear in the guide may be subject to changes as a result of the restrictions to face-to-face class attendance imposed by the health authorities.

Contact

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Use of Languages

Principal working language: catalan (cat)
Some groups entirely in English: No
Some groups entirely in Catalan: Yes
Some groups entirely in Spanish: No

Teachers

Juan Francisco Piniella Febrer

Prerequisites

- The student must have completed at least 2/3 of the total ECTS credits of the degree to enroll in this subject (i.e. 160 ECTS).
- The student must have completed all the credits of the first two years.
- The Academic Management of the Faculty of Sciences will establish the enrollment periods.

Objectives and Contextualisation

The aim of the Final Degree Project is to deepen and / or apply and convey the knowledge acquired during the Degree in Nanoscience and Nanotechnology.

The Final Degree Project involves the completion of an original project, report or study by the student under the supervision of a tutor. The contents, skills, and competencies acquired during the Degree are integrated and developed in the project.

The level of work must correspond to the knowledge and skills of a graduate:

- The student must carry out an individual work on a topic agreed with his/her tutor. The tutor must be a doctor, either a professor or a researcher, linked to UAB.

- The project can be co-supervised by a maximum of 2 people, being at least one of them a professor from UAB. He/she will be responsible for advising and monitoring the work in the case it is performed in an institution outside UAB.

- To formalize the enrollment, a document signed by the supervisor of the project and by the student is required, in which the goals, methodology and length of the project are briefly outlined. This document will be validated by the coordinator of the subject.

Competences

- Adapt to new situations.
- Apply ethical principles and legislative standards to the field of nanoscience and nanotechnology.
- Apply the concepts, principles, theories and fundamental facts of nanoscience and nanotechnology to solve problems of a quantitative or qualitative nature in the field of nanoscience and nanotechnology.
- Be ethically committed.
- Communicate clearly in English.
- Communicate orally and in writing in ones own language.
- Demonstrate knowledge of the concepts, principles, theories and fundamental facts related with nanoscience and nanotechnology.
- Handle the standard instruments and materials of physical, chemical and biological testing laboratories for the study and analysis of phenomena on a nanoscale.
- Interpret the data obtained by means of experimental measures, including the use of computer tools, identify and understand their meanings in relation to appropriate chemical, physical or biological theories.
- Learn autonomously.
- Manage the organisation and planning of tasks.
- Obtain, manage, analyse, synthesise and present information, including the use of digital and computerised media.
- Operate with a certain degree of autonomy.
- Propose creative ideas and solutions.
- Reason in a critical manner
- Recognise and analyse physical, chemical and biological problems in the field of nanoscience and nanotechnology and propose answers or suitable studies for their resolution, including when necessary the use of bibliographic sources.
- Recognise the terms used in the fields of physics, chemistry, biology, nanoscience and nanotechnology in the English language and use English effectively in writing and orally in all areas of work.
- Resolve problems and make decisions.
- Show initiative and an enterprising spirit.
- Show motivation for quality.
- Show sensitivity for environmental issues.
- Work correctly with the formulas, chemical equations and magnitudes used in chemistry.
- Work on the synthesis, characterisation and study of the properties of materials on a nanoscale from previously established procedures.

Learning Outcomes

1. Adapt to new situations.
2. Apply concepts and theories in order to produce academic or professional work in fields related with nanoscience and nanotechnology
3. Apply ethical principles and legislative standards in terms of nanoscience and nanotechnology when producing academic or professional work.
4. Be ethically committed.
5. Communicate clearly in English.
6. Communicate orally and in writing in ones own language.
7. Interpret data when producing academic or professional work in fields related with nanoscience and nanotechnology.
8. Learn autonomously.
9. Manage the organisation and planning of tasks.
10. Obtain, manage, analyse, synthesise and present information, including the use of digital and computerised media.
11. Operate with a certain degree of autonomy.
12. Produce a summary in English of the work done.
13. Propose and develop protocols to produce academic or professional work in fields related with nanoscience and nanotechnology
14. Propose creative ideas and solutions.

15. Reason in a critical manner
16. Recognise and analyse problems with producing academic or professional work in fields related with nanoscience and nanotechnology
17. Resolve problems and make decisions.
18. Show initiative and an enterprising spirit.
19. Show knowledge and understanding of the preparation of a study in fields related with nanoscience and nanotechnology.
20. Show motivation for quality.
21. Show sensitivity for environmental issues.
22. Use computer applications related with nanoscience and nanotechnology.
23. Work correctly with the formulas, chemical equations and magnitudes used in chemistry.

Content

Each student will carry out the TFG under the supervision of one or two supervisors, of whom at least one of them will act as a *tutor* for administrative and evaluation purposes. In addition, the subject will have a coordination team whose composition will be agreed by the Coordination of the Nanoscience and Nanotecnology Degree. Finally, the course will also have a space on the Virtual Campus.

- The work must be done individually.
- The supervisor and the student will agree on the tasks once the topic of the project has been defined. The director will facilitate access to basic documentation for its realization. The approximate duration will be one semester.
- Projects can also be carried out in institutions or companies outside UAB and under the framework of mobility programs. In the latter, the terms of collaboration will be specified and the commitment of the co-supervisor from the foreign institution to the monitoring of the PhD student must be guaranteed. In this case, a second tutor will be assigned among the pool of UAB professors. In any case, the evaluation of the project will be carried out at the UAB.

Methodology

Refer to the Catalan version of the teaching guide.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Supervised			
Mentorship	45	1.8	2, 3, 19, 7, 13, 12, 16, 22
Type: Autonomous			
Bibliography search	30	1.2	2, 3, 8, 5, 6, 19, 9, 7, 4, 10, 11, 15, 16, 17, 22
Preparation and drafting of the report	84	3.36	1, 2, 3, 8, 5, 6, 19, 18, 20, 9, 7, 4, 21, 10, 11, 13, 14, 15, 12, 16, 17, 23, 22
Project development	135	5.4	1, 2, 3, 8, 19, 18, 7, 4, 11, 13, 14, 15, 16, 23, 22

Assessment

Refer to the Catalan version of the teaching guide.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Monitoring of the research work	40%	5	0.2	1, 2, 3, 8, 5, 6, 19, 18, 20, 9, 7, 4, 21, 10, 11, 13, 14, 15, 12, 16, 17, 23, 22
Oral defense of the research work	60%	1	0.04	1, 2, 3, 8, 6, 19, 18, 20, 7, 4, 21, 10, 13, 14, 15, 12, 16, 22

Bibliography

No dedicated bibliography.